

Appl. No. 10/065,684
Reply to Office Action Dated AUGUST 25, 200

REMARKS

Applicants request reconsideration of the application in view of the above amendments and the following remarks. Claims 1 to 15 were pending. Claim 3 has been canceled without prejudice and some other claims have been amended. It is believed that no new matter has been added by way of any amendments provided herein.

Claim rejection under 35 USC § 101

The Applicant disagrees with the Examiner who has argued that independent claims 1, 14 and 15 are directed at non-statutory subject matter. The examiners argues that the invention fails to produce a result. However, the claimed invention does accomplish a practical application.

Specifically, it is described at page 2 lines 21 to 24 that it is useful to determine a dynamic model which simulates the flow of fluids in a reservoir. The first paragraph of page 13 clearly describes the refining process of the dynamic model, which in one embodiment is achieved by obtaining variation in the relative permeability, as near as possible to that found in reality. See also the second paragraph of page 10 of the text as filed which describes both the process for determining the variation in the relative permeability (claims 1 and 14) and the process for constructing a dynamic flow model (claim 15).

The preamble of claim 1 defines the result to be achieved of at least one embodiment, which is the "determination of the variation in the relative permeability ...". To overcome the examiner's latest objections we have tried to clarify this result even further by amending the

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final feature of claim 1 to recite *"if SSD and SDM substantially coincide the dynamic model is considered sufficiently reliable for the variation in the relative permeability of the at least one fluid, otherwise updating the dynamic model..."*. This is supported in the text as filed, for example see the paragraph spanning pages 15 and 16.

Thus, the claim now defines at step e) that if the comparison performed in the previous step d) substantially coincides, then the result of determining the variation for at least one of the fluids being near to reality has been achieved. At this stage the dynamic model is sufficiently reliable for at least one of the fluids. If the comparison does not substantially coincide then the result, which is the variation of the relative permeability, is not acceptable and the dynamic model needs to be refined further, for example see lines 6 to 10 on page 16 of the text as filed.

Thus, claim 1 has now been amended to more clearly define a concrete, useful and tangible result if the SSD and SSM substantially coincide as required by the Examiner.

Independent claim 14 is directed to a slightly different aspect of the process, which is to resistivity (i.e. RDM and SRD). The final feature of claim 14 has been amended in line with the amendments made to claim 1 to more clearly define the result if the RDM and SRD substantially coincide.

Independent claim 15 is again directed to a slightly different aspect which is "a process for determining ... a dynamic flow model". Again the final feature of claim 14 has been

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amended to more clearly define the result if the preceding comparison step substantially coincides.

The applicant submits that no further clarification is required, since it is clear from the description that a further result to be achieved is the determination of a dynamic model. This is supported by the text as filed. See in particular the second paragraph of page 10 which describes that the flow chart of Figure 2, for obtaining the result of the variation of the relatively permeability, also applies to the process for determining a dynamic flow model. Moreover, page 16 lines 1 to 3 emphasizes this result of obtaining a sufficiently reliable dynamic model in the case that the SDM and SSD comparison substantially coincides.

Under section 12, the Examiner argues that the claims do not define what happens if after repeating steps b) and c) the distributions still do not substantially coincide.

The Applicant submits that at least one iteration of the process has been clearly claimed and the independent claims have been amended to recite what happens when the comparison coincides and otherwise, to perform a different action. This step is sufficient to distinguish over the prior (as acknowledged by the examiner) and also to define the result to be achieved. The Applicant submits that no further limitations are required to make the claims more understandable.

The Applicant submit that the amendments to claims 1, 14 and 15 overcome the examiner's objections and describe a concrete, useful and tangible result if the comparison coincides.

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Claim rejection under 35 USC § 112

Independent claims 1 and 14 are rejected under 35 U.S.C. 112 as being incomplete for omitting essential steps, specifically the step for deriving the variation in the relative variability.

The Applicants disagree with such an objection and submits that it would be evident to a skilled person upon reading the application that the result cannot be achieved by a single step per se. Instead the result of determining the variation of the relative permeability, as defined in claims 1 and 14, is achieved through a plurality of essential steps, which are fully defined in the existing claim language. Specifically, there are five essential steps:

- a) Determining a distribution based on a measurement (for example SDM, RDM)
- b) creating a dynamic model
- c) generating a distribution based on a simulation obtained from the dynamic model (SSD, SRD)
- d) comparing the distributions
- e) based on this comparison deciding whether the result is sufficiently accurate or whether the model/variation result needs to be refined further.

All of these essential steps for achieving the respective result are defined in claims 1 and 14.

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Applicants believe this reply to be fully responsive to all outstanding issues. This paper is submitted in response to the Office Action dated August 25, 2006 for which the three months date for response is November 25, 2006 and the one-month extended date for response is 25 December 2006. Please apply any charges not covered, or any credits, to Deposit Account 50-2183 (Reference Number US 21.0910).

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